

Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of)	
)	
Revision of the Commission's Rules to)	
Ensure Compatibility With Enhanced 911)	CC Docket No. 94-102
Emergency Calling Systems)	
)	
Amendment of Parts 2 and 25 to)	
Implement the Global Mobile Personal)	
Communications by Satellite (GMPCS))	
Memorandum of Understanding and)	IB Docket No. 99-67
Arrangements; Petition of the National)	
Telecommunications and Information)	
Administration to Amend Part 25 of the)	
Commission's Rules to Establish)	
Emissions Limits for Mobile and Portable)	
Earth Stations Operating in the 1610-)	
1660.5 MHz Band)	

COMMENTS OF INTRADO INC.

Intrado Inc. (Intrado)¹ hereby submits these comments in response to the Federal Communication Commission's (Commission) Report and Order and Second Further Notice of Proposed Rulemaking (SFNPRM) released December 1, 2003 in the above captioned proceedings.² The Commission issued rules mandating access to 911 services based on comments regarding the feasibility and end user expectations of

¹ Founded in 1979, Intrado (NasdaqNM: TRDO) is the nation's leading provider of sophisticated solutions that identify, manage and deliver mission critical information for telecommunications providers and public safety organizations.

² Further Notice of proposed Rulemaking (SFNPRM), FCC 03-290, rel. December 1, 2003

access to emergency services from various communications devices and services.³ In addition, the Commission seeks further comment regarding several topics:

- the deployment of call centers to meet the new rules set forth by the Commission.
- how the integration of Auxiliary Terrestrial Components (ATC) for MSS may impact the deployment and operations of the call center obligations now incumbent upon MSS.
- the impact of technologies like Internet Protocol (IP) on manufacturing 911 compatible MLTS equipment, the impact of the National Emergency Number Association's proposed modification to Part 64 of the Commission's rules, as well as the impact of updated comments on the Commission's authority over the various MLTS stakeholders.

DISCUSSION

Intrado supports the Commission's efforts to address the public safety challenges posed by emerging communications technologies. As new technologies emerge, they should be integrated into the public safety system so that users can summon emergency assistance just as effectively as if they were using wireline telephones. In doing so, however, it is imperative that sharp focus be maintained on the unique public safety mission and critical public safety success factors that, regardless of the underlying transmission technology, will determine the effectiveness of emergency response efforts.

911 is a valuable and effective service because it is accurate, robust, and secure. 911 data is validated against Master Street Address Guides (MSAGs) to ensure

³ Specifically, the Commission determined that Mobile Satellite Service Providers (MSS) must establish call centers responsible for handling emergency calls and notifying the appropriate Public Safety Answering Point (PSAP) of the nature and specifics of the emergency. The Commission declined to establish national rules for the deployment of Multi-Line Telephone Service (MLTS) access to 911. The Commission determined that the states are better suited to effectively foster the adoption of MLTS rules that would lead to an expeditious deployment of MLTS applications for access to emergency services. However, the Commission reinforced the importance of MLTS access to 911, and the

accuracy, 911 voice and data networks are engineered redundantly to eliminate single points of failure, and access to the 911 system is controlled. These key concepts – accuracy, robustness, and security – represent foundational pillars upon which the nation's 911 system is built and are why emergency communications services in the United States are the finest in the world.

Unfortunately, the foundational pillars are not being prioritized by existing Voice over Internet Protocol (VoIP) standards setting bodies. The 911 environments proposed by such standards setting bodies, therefore, are inadequate and inconsistent with the critical success factors for public safety. Accurate address data is critical to effective emergency response; yet, the IP-based models proposed by existing standards setting bodies abandon MSAG validation. Moreover, such decentralized IP-based models would be at risk from Internet-style attacks which could cripple the 911 system.

Intrado believes that all emergency calls, regardless of their source and the underlying transmission technology, should be delivered to PSAPs in a homogenous manner – i.e., within the designated 911 operating systems such that the 911 call taker is provided with highly accurate information that has the same look, feel and operational characteristics as other 911 calls. Emerging technologies such as VoIP pose challenges to this paradigm, and short term solutions may fall short of this standard. However, in addressing the challenges and developing long term solutions, it is imperative that the pillars upon which the nation's existing 911 infrastructure is based be embraced not forsaken. Simply put, lives hang in the balance.

Commission indicated that it will be closely monitoring the progress made at the state level to effect a rapid adoption of MLTS access to emergency services.

MOBILE SATELLITE SERVICES

Intrado supports the establishment of call centers for the handling of emergency calls from MSS end users. Intrado also believes, however, that wherever possible, emergency calls should be delivered to jurisdictionally appropriate existing PSAPs as native 911 calls. The technology to do so exists today, but deploying such technology requires cooperation from the 911 service providers (typically, the ILECs)⁴ and, depending on the methods employed, may be prohibitively expensive.

Network

Today's incumbent 911 network infrastructure is engineered from a point to point, circuit-switched perspective. End offices are generally directly trunked to Selective Routers⁵ that deliver emergency calls to dedicated circuits terminating in special 911 equipment at the PSAP.⁶ As a result, the existing 911 infrastructure is inflexible and ill equipped to accommodate emergency calls generated by geographically disparate communications platforms.

Given the limitations of the existing infrastructure, there are currently two solutions for enabling a call center to deliver emergency calls as native 911 calls. The first solution would require call centers to trunk directly to existing Selective Routers. While technically feasible, this approach is not economically viable given the current subscriber base for MSS (as well as MLTS and VoIP) services.

⁴ In conjunction with the Greater Harris County 911 Emergency Network, Ford Motor Company, Cross County Automotive and SBC, Intrado is conducting a trial of such technology in Greater Harris County, Texas. The trial has generated solid empirical data regarding the delivery of emergency calls from telematics call centers calls to PSAPs as native 911 calls. This data has been provided to NENA so that it may assess the feasibility of this call delivery approach the PSAP, service provider, and carrier perspectives. Intrado understands that NENA's non-traditional technical committee currently is reviewing the data and call delivery methodology.

⁵ In a minority of circumstances, end offices trunk directly to the PSAP.

The second solution would leverage the existing infrastructure to deliver such emergency calls as native 911 calls. Such a solution would require: (1) a slight (or possibly no) modification to the call center's call handling system; (2) development of an interface by which a PSAP database can be queried; and (3) 911 network service providers (typically, the ILECs) to perform simple switch programming or translations based on switch technology and functionality that currently exist. The importance of the third factor cannot be understated. Absent ILEC cooperation in making such switch translations, a call center or any other non-certificated communications service provider would be unable to deliver emergency calls as native 911 calls and would be able to deliver such calls only to local exchange numbers.

Database

The success of the call center model is incumbent upon a complete, accurate and regularly updated PSAP database. PSAP databases are commercially available today, and NENA has recently instituted a National PSAP registry. There is some debate in the public safety community about the suitability of routing to PSAP local exchange telephone numbers emergency calls placed by subscribers of entities that do not or cannot interface their with the existing 911 infrastructure. Intrado suggests that the Commission, in conjunction with NENA and APCO, work with the state 911 coordinators to allay PSAP concerns about such national PSAP databases and serve as liaisons to MSS carriers, telematics providers, and VoIP providers in addressing operational issues associated with emergency call delivery.

⁶ This equipment bids the ALI database for subscriber information and displays that information, along with ANI and other information, at the call taker position.

Reporting

The Commission requests comment regarding reporting and record keeping requirements for MSS during the design, deployment and maintenance of MSS call centers for processing calls initiated by dialing 911. With respect to maintenance, Intrado believes that MSS providers should be subject to reporting requirements equivalent to those required of providers today (e.g., reporting requirements generated by NRIC, etc.). With respect to design and deployment, Intrado recommends that reporting requirements be placed on all of the interested stakeholders – e.g., MSS providers, LECs, PSAPs, etc. – rather than exclusively on MSS providers. Such comprehensive reporting will enable the Commission to truly monitor the development and growth of MSS, the volume of emergency calls generated by MSS services, the associated public safety implications, and the need to migrate to automated delivery of such calls to PSAPs.

MULTI-LINE TELEPHONE SYSTEMS

The Commission seeks comment on how the growth of IP telephony will affect the manufacture and deployment of new MLTS equipment and its use for 911 calls. Specifically, the Commission wishes to determine if the use of IP telephony affects the policy question of whether MLTS 911 standards should be uniform nationally or set on a state-by-state basis.

There are various manifestations of MLTS, (key systems, hybrid, PBX); however, it appears the most rapid adoption of IP technology is in the IP PBX arena, where the PBX operators are leveraging an existing data network to carry voice traffic for their end

users. This adoption allows remote data users access to PBX voice functionality such as conference calling and virtual office applications. While these end users often are relatively transitory (i.e., their geographic location may change on a daily basis), the IP PBX system can readily and rapidly accommodate such moves.

However, the same factors that make IP PBX attractive -- end user mobility and access to voice and data networks -- will be sources of more stress on the nation's already capacity and functionality challenged 911 infrastructure.

Existing ILEC 911 database management tools for integrating Private Switch 911 (PS 911 or PS ALI) data pattern themselves after the traditional Competitive Local Exchange Carrier (CLEC) circuit switch service order interfaces and processes used currently to create data for 911 systems. The PBX operator must use MSAG-valid addresses for all records that are submitted to the 911 system or risk rejection of the data for an invalid address.⁷ Traditionally, the PBX operator works with the local 911 administrative entities to verify what is generally a small number of addresses served by the PBX.

IP PBX complicates this model. Indeed, given the more portable nature of stations behind the IP PBX, it is quite possible the number of geographic addresses served by the PBX is unknown to the operator, and further compounding the matter is the fact the end user may move to a geographic area served by another ILEC 911 service provider. The IP PBX operator or administrator is generally unaware of such moves, and while the IP PBX may know the IP address of the end user, the geographic

⁷ MSAG valid addresses are required to create both the subscriber ALI data presented to the PSAP and the routing data associated with the location for the Selective Router to route the call to the correct PSAP.

address is not known to anyone (except perhaps the end user).⁸ This situation makes it difficult for the PBX operator to validate addresses for creation of end user records and exacerbates the problems already associated with the data upload process.

Once a PBX operator creates records for each IP PBX station, the data must be uploaded in batch mode to the 911 service provider (typically, the ILEC). Such uploads often occur daily, although multiple batch loads may be available in certain areas. Depending on the ILEC's operational policies, these uploads may be processed by the ILEC once or multiple times per day. If the uploaded data passes all data validation processes, a subscriber record for a PBX station indicating location is loaded into the 911 database. Should there be a failure in the validation process, the submitted record is sent back to the PBX operator with a reason for error.

This process of processing subscriber data received from the PBX operator through 911 database management systems to create routing records and ALI records generally requires 24 to 72 hours depending on the day of the week. Unfortunately, if the PBX end user moved within the processing period, the record created and uploaded into the 911 system will no longer be valid, and the error will not be addressed until a subsequent update is provided by the PBX operator. The inherent mobility of IP PBX end users only complicates this problem.

Another dilemma posed by the highly portable nature of IP PBX end users is that an end user can have access to voice network features and be served by phone numbers PBX that may not be indigenous to the rate center configuration in which the

⁸ Intrado notes that several companies are developing IP PBX management systems that are able to track IP PBX station mobility and associate a geographic address. Such IP PBX systems can be engineered to deliver 911 calls over specially designated trunks. However, even with the deployment of such advanced technology for IP PBX systems, the PBX operator or administrator still faces the scalability, economic feasibility, and maintenance challenges faced by MSS call centers for delivering emergency calls as native 911 calls.

end user is physically located. Therefore it may be difficult to process the end user data for the 911 system serving the geographic location of the IP PBX end user.

More dynamic and easily accessible interfaces to 911 data, in addition to more dynamic 911 data processing tools, need to be made available in order to accommodate MLTS served by IP PBX. These interfaces and process changes require development and testing; yet, the current regulatory and business models for 911 do not support such infrastructure investment. Intrado urges the Commission to work with all stakeholders – i.e., the public safety community, state regulators, 911 service providers, third party vendors, etc. – to foster regulatory and business models conducive to such investment and innovation.

CONCLUSION

Intrado supports the Commission's efforts to promote the use of and access to the nation's 911 systems, and the recent Report and Order for MSS providers is a step in the right direction. The Commission should continue to actively provide guidance and promote industry collaboration to find reliable and scalable solutions to incorporate emergency calls from emerging and technologically disparate communications platforms into the 911 infrastructure.

Respectfully Submitted,

/s/

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